Amendments to the Claims:

The listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

1. (Currently amended) A mass analysis system comprising:

an ion injector ~~adapted to provide~~ providing a plurality of ions for analysis;

an ion selection chamber ~~adapted to receive~~ receiving the plurality of ions from the ion injector, the ion selection chamber having an axis, the ion selection chamber further having

an outer electrode disposed about the axis, and

a plurality of inner electrodes disposed about the axis, the plurality of ions being accepted from the ion injector into the interstitial region between the outer electrode and the plurality of inner electrodes; and

a power supply system connected to the electrodes of the ion selection chamber, where the power supply system selectively provides a constant voltage between the outer electrode and the plurality of inner electrodes to allow ions having different orbital periods to enter a stable orbit about the axis, and ~~adapted to provide an oscillating~~ where the power supply system also selectively provides a changing voltage ~~to~~ between the outer electrode and at least one of the plurality of inner electrodes to facilitate separation of ions of a selected mass-to-charge ratio from ions of non-selected mass-to-charge ratios based on the orbital periods of said plurality of ions ~~through said interstitial region~~ about the axis.

2. (Currently amended) A mass analysis system as claimed in claim 1 wherein said power supply system operates to initially direct said plurality of ions into a stable trajectory about the axis in said interstitial region.

3. (Currently amended) A mass analysis system as claimed in claim 2 wherein said ~~oscillating~~ changing voltage provided by said power supply system destabilizes the orbit ~~orbital trajectory~~ of ions of non-selected mass-to-charge ratios while concurrently maintaining ions of said selected mass-to-charge ratio in a stable orbit ~~orbital trajectory~~.

4. (Currently amended) A mass analysis system as claimed in claim 3 wherein said ~~oscillating~~ changing voltage provided by said power supply system ~~is variable~~ operates to destabilize the orbit ~~trajectory~~ of ions of the selected mass-to-charge ratio after destabilization of the orbit ~~trajectory~~ of ions of non-selected mass-to-charge ratios.

5. (Original) A mass analysis system as claimed in claim 4 and further comprising an ion detector disposed to detect ions of the selected mass-to-charge ratio.

6. (Original) A mass analysis system as claimed in claim 5 wherein said ion detector comprises said outer electrode.

7. (Currently amended) A mass analysis system as claimed in claim 1 wherein said ~~oscillating~~ changing voltage is a DC switched voltage.

8. (Currently amended) A mass analysis system as claimed in claim 4 wherein said ~~oscillating~~ changing voltage is a DC switched voltage.

9. (Currently amended) A mass analysis system as claimed in claim 1 wherein said plurality of inner electrodes comprises:

a first generally cylindrical inner electrode having at least one arcuate gap disposed along a length thereof;

a second inner electrode extending generally coextensive with said arcuate gap of said first inner electrode, the first and second inner electrodes and said outer electrode cooperating to form a substantially circular ion trajectory path about the axis in the interstitial region between said outer electrode and said inner electrodes.

10. (Currently amended) A mass analysis system as claimed in claim 9 wherein said ~~oscillating~~ changing voltage is a DC switched voltage.

11. (Currently amended) A mass analysis system as claimed in claim 1 wherein said plurality of inner electrodes comprises:

a first generally cylindrical inner electrode having first and second arcuate gaps disposed opposite one another and along a length of said first inner electrode;

a second inner electrode extending generally coextensive with said first arcuate gap;

a third inner electrode extending generally coextensive with said second arcuate gap, the first, second and third inner electrodes cooperating with said outer electrode to form a substantially circular ion trajectory path about the axis in the interstitial region between said outer electrode and said inner electrodes.

12. (Currently amended) An ion selection apparatus for use in a mass analysis system, the ion selection apparatus comprising:

a first electrode having a cylindrical interior electrode surface;

a second electrode having an exterior electrode surface concentrically disposed with and facing said interior electrode surface of said first electrode, the exterior electrode surface of said second electrode being generally cylindrical with at least one arcuate gap disposed along a length thereof;

a third electrode having an exterior electrode surface concentrically disposed with and facing said interior electrode surface of said first electrode, the exterior electrode surface of said third electrode being generally coextensive with said arcuate gap of said second electrode;

a power supply system connected to said first, second and third electrodes, said power supply system providing a DC voltage between said interior electrode surface of said first electrode and said exterior electrode surface of said second electrode, said power supply system selectively providing a switched DC voltage between said interior electrode surface of said first electrode and said exterior electrode surface of said third electrode.

13. (Currently amended) A method for detecting ions of a predetermined mass-to-charge ratio in a mass analysis system, the method comprising:

generating a plurality of ions for analysis;

directing the plurality of ions into a stable ~~ion trajectory~~ orbit about an axis within a substantially homogenous electric field;

introducing electric field perturbations to ~~of~~ said substantially homogenous electric field so that only ions of said predetermined mass-to-charge ratio that have a predetermined orbital period about the axis remain in a stable orbit about the axis. ~~trajectory within said electric field.~~

14. (Currently amended) A method as claimed in claim ~~reference claim~~ 13 and further comprising the step of altering said substantially homogenous electric field so that the orbits of said ions of said predetermined mass-to-charge ratio are substantially destabilized to facilitate their detection. ~~leave said stable trajectory.~~

15. (Currently amended) A method for detecting ions as claimed in claim 14 and further comprising the step of detecting said ions of said predetermined mass-to-charge ratio as said ions leave said stable orbit ~~trajectory~~.

16. (Currently amended) A method for detecting ions as claimed in claim 13 wherein said electric field perturbations are periodic and predominantly effect the radio components of the substantially homogenous electric field.

17. (Currently amended) A method for detecting ions as claimed in claim 13 wherein said electric field perturbations are generated by a switched DC voltage signal applied to one or more electrodes used to generate said generally homogenous electric field.

18. (Currently amended) A method for detecting ions as claimed in claim 13 wherein said stable orbit ~~trajectory~~ is substantially circular.

19. (Currently amended) A method for detecting ions of a predetermined mass-to-charge ratio in a mass analysis system, the method comprising:

generating a plurality of ions for analysis;

directing the plurality of ions into an interstitial region formed in a concentric electrode arrangement, said concentric electrode arrangement comprising an exterior electrode having a generally cylindrical interior region and a plurality of interior electrodes arranged to have ~~in~~ a generally cylindrical surface facing ~~manner in~~ the interior region of said exterior electrode, said interstitial region of said concentric electrode arrangement being disposed about an axis;

providing electrical power to said concentric electrode arrangement to generate a generally homogenous electric field in said interstitial region whereby said plurality of ions are directed into a substantially stable ~~trajectory~~ orbit in said interstitial region about the axis;

varying said electric power to said concentric electrode arrangement to introduce electric field perturbations in said substantially homogenous electric field whereby only ions of said predetermined mass-to-charge ratio that have a predetermined orbital period remain in a stable ~~trajectory~~ orbit about the axis ~~within said electric field~~.

20. (Original) A method for detecting ions as claimed in claim 19 and further comprising the steps of:

further varying said electric power to said concentric electrode arrangement to alter said substantially homogenous electric field so that ions of said predetermined mass-to-charge ratio leave said stable orbit ~~trajectory~~; and

detecting said ions of said predetermined mass-to-charge ratio.

21. (Currently amended) A method for detecting ions as claimed in claim 20 wherein the step of detecting said ions comprises detecting said ions of said predetermined mass-to-charge ratio as said ions of said predetermined mass-to-charge ratio contact the interior region of said exterior electrode after leaving said stable orbit ~~trajectory~~.

22. (Currently amended) A method for detecting ions as claimed in claim 19 wherein said stable orbit ~~trajectory~~ is substantially circular.

23. (Currently amended) A method for detecting ions as claimed in claim 21 wherein said stable orbit ~~trajectory~~ is substantially circular.

24. (New) A method for detecting ions of a predetermined mass-to-charge ratio in a mass analysis system, the method comprising:

generating a plurality of ions for analysis;

trapping the plurality of ions into a stable orbit about an axis in an electric field formed between a plurality of concentric electrodes;

selectively removing ions having non-selected mass-to-charge ratios from the stable orbit based on the orbital period about the axis of the ions having the predetermined mass-to-charge ratio.

25. (New) A method as claimed in claim 24 where the method further comprises removing ions having the predetermined mass-to-charge ratio from the stable orbit about the axis for detection.